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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,403	03/31/2004	Danny S. Barlow	M-15325 US	7974

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EXAMINER	
TON, MY TRANG	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,403	BARLOW, DANNY S.	
	Examiner	Art Unit	
	My-Trang N. Ton	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

MY-TRANG NU TON
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The Amendment filed on 8/3/05 has been received and entered in the case. In response to the remarks, the rejection made in the last Office action on the Naura and Rodriguez references are withdrawn. A new Office action has been made as follows:

Claim Rejections - 35 USC § 112

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20, it is not fully clear which element is referred as "a second inverter ... couples to the output terminal of the first inverter". In order to avoid any confusion, Applicant is required to particularly point out how this limitation reads on the circuit arrangement of the drawings.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 4, 6, 11-13 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Diba (U.S Patent No. 5,489,866).

Diba discloses in fig. 3 an improved Schmitt trigger including:

a first feedback path (feedback path connected from Q15 to Q17, Q110) configured to determine one of the voltage thresholds; and

at least one diode (Q15) coupled to the first feedback path (the feedback path connected from Q15 to Q17, Q10) such that an on current through the first feedback path (the feedback path connected from Q15 to Q17, Q10) is reduced as a supply voltage for the Schmitt trigger is reduced as recited in claim 1.

Regarding claim 2: the Schmitt trigger is a CMOS Schmitt trigger (col. 4, lines 44-49).

Regarding claim 3: the first feedback path (the feedback path connected from Q15 to Q17, Q10) is configured to determine the low voltage threshold, the Schmitt trigger further comprising: a second feedback path (feedback path y connected from Q28 to Q13, Q14) configured to determine the high voltage threshold.

Regarding claim 4: the first feedback path (the feedback path connected from Q15 to Q17, Q10) comprises a first PMOS transistor (Q10) having a terminal coupled to the at least one diode (Q15) and wherein the second feedback path (the feedback path y) comprises a first NMOS transistor (Q13).

Regarding claim 6: the terminal is a drain terminal, the least one diode coupled between the drain terminal and ground (via Q16, Q20 and Q22).

Regarding claim 11: elements Q17, Q10 read on second and third PMOS transistors and elements Q13, Q14 read on second and third NMOS transistors all coupled in series between a supply voltage terminal (Vcc) and a ground terminal (ground).

The method recited in claims 12-13 are inherent to the operation of the Schmitt trigger circuit of Diba.

Claims 15-16 are similarly rejected as above claims:

a first feedback path (the feedback path connected from Q15 to Q17, Q10) configured to determine one of the voltage thresholds; and

means for reducing an on-current (Q15) through the first feedback path (the feedback path connected from Q15 to Q17, Q10) as a supply voltage for the Schmitt trigger is reduced;

the first feedback path (the feedback path connected from Q15 to Q17, Q10) comprises a first PMOS transistor (Q10) and the means for reducing the on-current comprises at least one diode (Q15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 7-10, 14, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diba.

As stated above, every element of the claimed invention recited in above claims can be seen in the circuit of Diba. However, this reference does not show "a first diode and a second diode" (claim 5); "first feedback path determines the high voltage ... determines the low voltage" (claims 7, 14); "a diode-connected PMOS transistor" (claim 17.

However, regarding "a first diode and a second diode" recited in claim 5, this limitation appears to be obvious: mere duplication of parts is not patentably distinct. In re Haza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use more than one diode (the first diode and the second diode) in the Schmitt trigger of Diba since mere duplication of parts is not patentably distinct.

Regarding the limitation recited in claims 7-8, 10: these limitations appear to be obvious variations (i.e.., not patentably distinct) to limitations recited in claims 3-4 and 6. Therefore, it would have been obvious to one of ordinary skill in the art to employ (the first feedback path determines the high voltage threshold, the second feedback path that determines the low voltage threshold), as they appear to be obvious variations (not patentably distinct) and yielding same functional device.

The same motivation applied to claim 5 is applied to claim 9.

The same motivation applied to claim 7 is applied to claim 14.

Regarding claim 17: such transistor is art recognized equivalents since no unobvious result is seen produce by using a diode-connected PMOS over a diode-connected NMOS of Diba. Therefore, it would have been obvious at the time the invention was made for one skilled in the art to employ a diode-connected PMOS transistor in the Diba circuit with no unexpected result.

The same motivation applied to 7-8, 10 is applied to claims 18-19.

Regarding the limitation recited in claim 20: element Q10, Q12, Q13, Q14 read on "a first inverter. Regarding "the second inverter", it is old and notoriously well-known in the art that the inverters are used as buffering or signal inverting purposes. Therefore, it would have been obvious at the time the invention was made for one skilled in the art to incorporate second inverter to the Schmitt trigger circuit of Diba for buffering or level inverting purposes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

My-Trang N. Ton
Primary Examiner
Art Unit 2816

October 12, 2005